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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
VU, MICHAEL T	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,677	ANNUNZIATO ET AL.	
	Examiner	Art Unit	
	MICHAEL T. VU	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remark, filed 04/30/2010, with respect to the rejection(s) of claim(s) 22-42 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Grubeck et al (US 6,154,657) in view of Chow (US 6,771,966).

Claim Objections

2. Claim 22 is objected to under 37 CFR 1.75(i), where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. Appropriate correction is required. See MPEP 608.01 (m).

3. Claims 41-42 are objected to because of the following informalities:

For example: Claim 41 (original) "**A** cellular communication network comprising at least one processing module……." Dependent claims should change to "**the** cellular communication network comprising at least one processing module….."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 22-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grubeck et al (US 6,154,657) in view of Chow (US 6,771,966).**

Regarding claim 22, Grubeck teaches a method of planning cellular communication networks (Fig. 1 shows determining the position of a mobile station in a cellular telephone system, Col. 2, lines 8-17), comprising the step of defining at least one cost function to be optimized (a cost function which minimizes the costs to the systems, Col. 2, lines 8-25), said at least one cost function being indicative of the quality of service of at least one class of services rendered by the network (estimate of the accuracy of the mobile position, Col. 4, lines 8-64), comprising the step of selecting (determining the position of a mobile station in a cellular telephone system, Col. 4, lines 25-35), by the computer (includes a digital computer, Col. 5, line 48), said at least one class of services as location-based services rendered by said network (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Grubeck does not clearly discloses an implemented using a computer,

However, Chow discloses a network topology to provide optimized performance according to the design parameters that implemented using a computer (design

parameters, Col. 30, lines 43-4), and (analysis of communication links used by a computer, Col. 32, lines 9-27)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Grubeck, with Chow's teaching, in order to provide the multiple levels of link analysis are performed to determine an optimum network link configuration in the radio systems such as radio frequency plan.

Regarding claim 23, Grubeck and Chow teach the method of claim 22, Grubeck further teach wherein said cost function indicative of the quality of service of location-based services is based on measuring a dilution of precision of said network (geometrical dilution of precision GDOP, Col. 1, lines 55-67).

Regarding claim 24, Grubeck and Chow teach the method of claim 22, Grubeck further teach comprising the steps of: defining a joint cost function jointly indicative of the quality of service of location-based services (estimate of the accuracy of the mobile position, Col. 4, lines 41-64) and at least an additional class of services rendered by said network (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64), said additional class of services being selected from the group of voice services and data services (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64); and optimizing said joint cost function (a cost function which minimizes the costs to the systems, Col. 2, lines 8-25).

Regarding claim 25, Grubeck and Chow teach the method of claim 22, Grubeck further teach comprising the steps of: providing a system for measuring at least one actual network parameter (Col. 4, lines 4-35); and comparing the measurements provided by said measurement system with the corresponding parameters as planned (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 26, Grubeck and Chow teach the method of claim 22, Grubeck further teach comprising the step of locating at least one critical point in the network where inadequate quality of service is being provided (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 27, the combination of Grubeck and Chow teach the method of claim 26, Grubeck further teach comprising the step of generating information items indicative of counter measures to be carried out in said network in order to dispense with at least one critical point (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 28, Grubeck and Chow teach the method of claim 22, Grubeck further teach wherein said at least one cost function is optimized by using as input data the location of at least one radiating system associated with one base station in said cellular communication network (a cost function which minimizes the costs to the systems, Col. 2, lines 8-25).

Regarding claim 29, the combination of Grubeck and Chow teach the method of claim 28, Grubeck further teach for planning a cellular communication network over a given area (Fig. 1), comprising the steps of: subdividing said area into sub-areas (subset of base station, Col. 4, line 25-64), one of said sub-areas corresponding to the destination sub-area of a new base station in said network (Col. 4, lines 8-64), the remaining sub-areas being expected to be affected by the introduction of said new base station (Col. 4 lines 25-64); planning said destination sub-area of the new base station also by evaluating the effects on said remaining sub-areas (Col. 4, lines 8-64); and evaluating the quality of service resulting from said planning while ascertaining whether such a level of quality of service is satisfactory (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 30, the combination of Grubeck and Chow teach the method of claim 29, Grubeck further teach wherein said planning involves computing a point-by-point value of the dilution of precision for all the pixels in the area subject to planning (Col. 1, lines 55-67).

Regarding claim 31, the combination of Grubeck and Chow teach the method of claim 30, Grubeck further teach wherein said planning involves computing a cost function pertaining to location services only (Col. 4, lines 8-64), said cost function being a linear combination of said dilution of precision and the average and minimum values thereof (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 32, the combination of Grubeck and Chow teach the method of claim 29, Grubeck further teach comprising the step of optimizing a joint cost function for voice, data and location services (a cost function which minimizes the costs to the systems, Col. 2, lines 8-25).

Regarding claim 33, the combination of Grubeck and Chow teach the method of claim 29, Grubeck further teach wherein, if said quality of service is found not to be satisfactory (SNR Col. 2, lines 55-65), comprising the step of re-planning the position of at least one radiating system associated with one base station in said cellular network (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 34, the combination of Grubeck and Chow teach the method of claim 33, Grubeck further teach wherein said at least one radiating system whose position is re-planned associated with one base station is a radiating system associated with said new base station (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 35, the combination of Grubeck and Chow teach the method of claim 25, Grubeck further teach comprising the steps of: providing a set of network design parameters (measuring signal, Col. 2, lines 55-67); obtaining from said measurement system a set of measurements corresponding to said set of design parameters (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64); and locating at least one critical area wherein the quality of service of said location services fails to reach an

expected quality of service level as a result of said set of measurements failing to comply with said set of network design parameters (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 36, the combination of Grubeck and Chow teach the method of claim 35, Grubeck further teach comprising the steps of: selecting a service scenario (a cost function which minimizes the costs to the systems, Col. 2, lines 8-25); and selecting at least one location system as the one most affected by the variations in the network parameters being analyzed (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 37, the combination of Grubeck and Chow teach the method of claim 35, Grubeck further teach comprising the step of providing a list of points in the network characterized by their quality of service (a cost function which minimizes the costs to the systems, Col. 2, lines 8-25).

Regarding claim 38, the combination of Grubeck and Chow teach the method of claim 35, Grubeck further teach comprising the steps of generating (GPS, Col. 1 lines 15-27) and displaying a map of critical points in the area under analysis (Col. 2, lines 8-25).

Regarding claim 39, Grubeck and Chow teach the method of claim 22, Grubeck further teach comprising the step of providing a remote deployment module arranged for operating on a sub-set of the network subject to planning (determined the position of a

mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 40, the combination of Grubeck and Chow teach the method of claim 39, Grubeck further teach comprising the steps of configuring said remote deployment module for collecting local network data (a cost function which minimizes the costs to the systems, Col. 2, lines 8-25), pre-validating such measurements and either comparing said measurements with corresponding planning data of a network design sub-set or sending such measurements to a remote module for further processing (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 41, Grubeck and Chow teach a cellular communication network comprising at least one processing module for implementing the planning method of any one of claims 22 to 40, Grubeck further teach (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Regarding claim 42 Grubeck and Chow teach a computer readable medium encoded with a computer program product loaded into a memory of a computer and including software code portions for performing the steps of the method of any one of claims 22 to 40, Grubeck further teach (determined the position of a mobile station such as accuracy, time and cost-function that using high quality channels, Col. 4, lines 8-64).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL T. VU whose telephone number is (571)272-8131. The examiner can normally be reached on 8:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles N. Appiah can be reached on 571-272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

//MICHAEL T VU/
Examiner, Art Unit 2617

/Charles N. Appiah/
Supervisory Patent Examiner, Art Unit 2617